

WE CLAIM:

1. A method of transform-based encoding of digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks which can each be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a two dimensional array of two dimensional array frequency coefficients, said method comprising scanning said two dimensional array frequency coefficients, from each of said blocks, in a manner that is vertically biased and producing a one dimensional array of one dimensional array frequency coefficients.

2. The method of claim 1, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, said method further comprises:

representing said columns with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

representing said rows with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 15 and producing said one dimensional array of said one dimensional array frequency coefficients.

3. The method of claim 2, wherein said step of scanning said two dimensional array frequency coefficients in a vertically biased manner comprises:

assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$.

4. The method of claim 1, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, said method further comprises:

representing said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

representing said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

5. The method of claim 4, wherein said step of scanning said two dimensional array frequency coefficients in a vertically biased manner comprises:

assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;
assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;
assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;
assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;
assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;
assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;
assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;
assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;
assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;
assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;
assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$; and
assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$.

6. The method of claim 1, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, said method further comprises:

representing said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

representing said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

7. The method of claim 6, wherein said step of scanning said two dimensional array frequency coefficients in a vertically biased manner comprises:

assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;
assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;
assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;
assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;
assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;
assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;
assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;
assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;
assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;
assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$; and
assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$.

8. The method of claim 1, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, said method further comprises:

representing said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a

fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

representing said rows with a variable $m=0, 1, 2, 3, 4, 5, 6, 7$, or 8 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 63 and producing said one dimensional array of said one dimensional array frequency coefficients.

9. The method of claim 8, wherein said step of scanning said two dimensional array frequency coefficients in a vertically biased manner comprises:

assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigning a scanning order = 32 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigning a scanning order = 33 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigning a scanning order = 34 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigning a scanning order = 35 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigning a scanning order = 36 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigning a scanning order = 37 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigning a scanning order = 38 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigning a scanning order = 39 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigning a scanning order = 40 for a two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigning a scanning order = 41 for a two dimensional array frequency coefficient located at $n=4$ and $m=5$;

assigning a scanning order = 42 for a two dimensional array frequency coefficient located at $n=4$ and $m=6$;

assigning a scanning order = 43 for a two dimensional array frequency coefficient located at $n=4$ and $m=7$;

assigning a scanning order = 44 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigning a scanning order = 45 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigning a scanning order = 46 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigning a scanning order = 47 for a two dimensional array frequency coefficient located at $n=5$ and $m=4$;

assigning a scanning order = 48 for a two dimensional array frequency coefficient located at $n=5$ and $m=5$;

assigning a scanning order = 49 for a two dimensional array frequency coefficient located at $n=5$ and $m=6$;

assigning a scanning order = 50 for a two dimensional array frequency coefficient located at $n=5$ and $m=7$;

assigning a scanning order = 51 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigning a scanning order = 52 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigning a scanning order = 53 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigning a scanning order = 54 for a two dimensional array frequency coefficient located at $n=6$ and $m=4$;

assigning a scanning order = 55 for a two dimensional array frequency coefficient located at $n=6$ and $m=5$;

assigning a scanning order = 56 for a two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigning a scanning order = 57 for a two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigning a scanning order = 58 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigning a scanning order = 59 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigning a scanning order = 60 for a two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigning a scanning order = 61 for a two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigning a scanning order = 62 for a two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigning a scanning order = 63 for a two dimensional array frequency coefficient located at $n=7$ and $m=7$.

10 -18. (cancelled)

19. A device comprising an encoder for transform-based encoding of digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a two dimensional array of two dimensional array frequency coefficients, wherein said encoder scans said two dimensional array frequency coefficients, from each of said blocks, in a manner that is vertically biased and producing a one dimensional array of one dimensional array frequency coefficients.

20. The device of claim 19, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises four columns of frequency coefficients and four rows of frequency coefficients, said encoder:

represents said columns with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column; and

represents said rows with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row;

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 15 and producing said one dimensional array of said one dimensional array frequency coefficients.

21. The device of claim 20, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$.

22. The device of claim 19, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises four columns of frequency coefficients and eight rows of frequency coefficients, said encoder:

represents said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column; and

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row;

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

23. The device of claim 22, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$.

24. The device of claim 19, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises eight columns of frequency coefficients and four rows of frequency coefficients, said encoder:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column; and

represents said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row;

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

25. The device of claim 24, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$.

26. The device of claim 19, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises eight columns of frequency coefficients and eight rows of frequency coefficients, said encoder:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column; and

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6, 7$, or 8 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row;

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 63 and producing said one dimensional array of said one dimensional array frequency coefficients.

27. The device of claim 26, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 32 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a scanning order = 33 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a scanning order = 34 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigns a scanning order = 35 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigns a scanning order = 36 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 37 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 38 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a scanning order = 39 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a scanning order = 40 for a two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigns a scanning order = 41 for a two dimensional array frequency coefficient located at $n=4$ and $m=5$;

assigns a scanning order = 42 for a two dimensional array frequency coefficient located at $n=4$ and $m=6$;

assigns a scanning order = 43 for a two dimensional array frequency coefficient located at $n=4$ and $m=7$;

assigns a scanning order = 44 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a scanning order = 45 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a scanning order = 46 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a scanning order = 47 for a two dimensional array frequency coefficient located at $n=5$ and $m=4$;

assigns a scanning order = 48 for a two dimensional array frequency coefficient located at $n=5$ and $m=5$;

assigns a scanning order = 49 for a two dimensional array frequency coefficient located at $n=5$ and $m=6$;

assigns a scanning order = 50 for a two dimensional array frequency coefficient located at $n=5$ and $m=7$;

assigns a scanning order = 51 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a scanning order = 52 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a scanning order = 53 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a scanning order = 54 for a two dimensional array frequency coefficient located at $n=6$ and $m=4$;

assigns a scanning order = 55 for a two dimensional array frequency coefficient located at $n=6$ and $m=5$;

assigns a scanning order = 56 for a two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigns a scanning order = 57 for a two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigns a scanning order = 58 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigns a scanning order = 59 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigns a scanning order = 60 for a two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigns a scanning order = 61 for a two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigns a scanning order = 62 for a two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigns a scanning order = 63 for a two dimensional array frequency coefficient located at $n=7$ and $m=7$.

28. A device comprising a decoder for transform-based decoding of encoded digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a one dimensional array of one dimensional array frequency coefficients, wherein said decoder scans said one dimensional array frequency coefficients in a numerical sequential order, producing a two dimensional array of two dimensional array frequency coefficients.

29. The device of claim 28, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, said decoder:

represents said sixteen one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$;

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning order starting at $p=0$ and ending at $p=15$ and producing said two dimensional array of said two dimensional array frequency coefficients.

30. The device of claim 29, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and

wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 14$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 15$.

31. The device of claim 28, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, said decoder:

represents said thirty-two one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$;

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning order starting at $p=0$ and ending at $p=31$ and producing said two dimensional array of said two dimensional array frequency coefficients.

32. The device of claim 31, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row,

m=4 is a fifth row, m=5 is a sixth row, m=6 is a seventh row, and m=7 is at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at n=0 and m=0 a value of said one dimensional array frequency coefficient located at p = 0;

assigns a two dimensional array frequency coefficient located at n=0 and m=1 a value of said one dimensional array frequency coefficient located at p = 1;

assigns a two dimensional array frequency coefficient located at n=0 and m=2 a value of said one dimensional array frequency coefficient located at p = 2;

assigns a two dimensional array frequency coefficient located at n=0 and m=3 a value of said one dimensional array frequency coefficient located at p = 3;

assigns a two dimensional array frequency coefficient located at n=1 and m=0 a value of said one dimensional array frequency coefficient located at p = 4;

assigns a two dimensional array frequency coefficient located at n=1 and m=1 a value of said one dimensional array frequency coefficient located at p = 5;

assigns a two dimensional array frequency coefficient located at n=1 and m=2 a value of said one dimensional array frequency coefficient located at p = 6;

assigns a two dimensional array frequency coefficient located at n=0 and m=4 a value of said one dimensional array frequency coefficient located at p = 7;

assigns a two dimensional array frequency coefficient located at n=0 and m=5 a value of said one dimensional array frequency coefficient located at p = 8;

assigns a two dimensional array frequency coefficient located at n=0 and m=6 a value of said one dimensional array frequency coefficient located at p = 9;

assigns a two dimensional array frequency coefficient located at n=0 and m=7 a value of said one dimensional array frequency coefficient located at p = 10;

assigns a two dimensional array frequency coefficient located at n=1 and m=3 a value of said one dimensional array frequency coefficient located at p = 11;

assigns a two dimensional array frequency coefficient located at n=2 and m=0 a value of said one dimensional array frequency coefficient located at p = 12;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 31$.

33. (cancelled)

34. The device of claim 31, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 31$.

35. The device of claim 28, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, said decoder:

represents said sixty-four one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$;

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning order starting at $p=0$ and ending at $p=63$ and producing said two dimensional array of said two dimensional array frequency coefficients.

36. The device of claim 35, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 30$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 31$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 32$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 33$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 34$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 35$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 36$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 37$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 38$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 39$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 40$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 41$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 42$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 43$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 44$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 45$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 46$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 47$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 48$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 49$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 50$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 51$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 52$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 53$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 54$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 55$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 56$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 57$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 58$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 59$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 60$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 61$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 62$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 63$.

37. A transform-based encoding system for encoding digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks which can each be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a two dimensional array of two dimensional array frequency coefficients, said system comprising:

means for scanning said two dimensional array frequency coefficients from each of said blocks in a manner that is vertically biased ; and

means for producing a one dimensional array of one dimensional array frequency coefficients .

38. The system of claim 37, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, said system further comprises:

means for representing said columns with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

means for representing said rows with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

means for scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 15.

39. The system of claim 38, wherein said means for scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

means for assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

means for assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

means for assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

means for assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

means for assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

means for assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

means for assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

means for assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

means for assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

means for assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

means for assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

means for assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

means for assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

means for assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

means for assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

means for assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$.

40. The system of claim 37, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, said system further comprises:

means for representing said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

means for representing said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

means for scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31.

41. The system of claim 40, wherein said means for scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

means for assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

means for assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

means for assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

means for assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

means for assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

means for assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

means for assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

means for assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

means for assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

means for assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

means for assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

means for assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

means for assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

means for assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

means for assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

means for assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

means for assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

means for assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

means for assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

means for assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

means for assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

means for assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

means for assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

means for assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

means for assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

means for assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

means for assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

means for assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

means for assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

means for assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

means for assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

means for assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$.

42. The system of claim 37, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, said system further comprises:

means for representing said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

means for representing said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

means for scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31.

43. The system of claim 42, wherein said means for scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

means for assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

means for assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

means for assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

means for assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

means for assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

means for assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

means for assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

means for assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

means for assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

means for assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

means for assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

means for assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

means for assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

means for assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

means for assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

means for assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

means for assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

means for assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

means for assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

means for assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

means for assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

means for assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

means for assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

means for assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

means for assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

means for assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

means for assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

means for assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

means for assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

means for assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

means for assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

means for assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$.

44. The system of claim 37, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, said system further comprises:

means for representing said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

means for representing said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

means for scanning said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 63.

45. The system of claim 44, wherein said means for scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

means for assigning a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

means for assigning a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

means for assigning a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

means for assigning a scanning order = 3 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

means for assigning a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

means for assigning a scanning order = 5 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

means for assigning a scanning order = 6 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

means for assigning a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

means for assigning a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

means for assigning a scanning order = 9 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

means for assigning a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

means for assigning a scanning order = 11 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

means for assigning a scanning order = 12 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

means for assigning a scanning order = 13 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

means for assigning a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

means for assigning a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

means for assigning a scanning order = 16 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

means for assigning a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

means for assigning a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

means for assigning a scanning order = 19 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

means for assigning a scanning order = 20 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

means for assigning a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

means for assigning a scanning order = 22 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

means for assigning a scanning order = 23 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

means for assigning a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

means for assigning a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

means for assigning a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

means for assigning a scanning order = 27 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

means for assigning a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

means for assigning a scanning order = 29 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

means for assigning a scanning order = 30 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

means for assigning a scanning order = 31 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

means for assigning a scanning order = 32 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

means for assigning a scanning order = 33 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

means for assigning a scanning order = 34 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$;

means for assigning a scanning order = 35 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$;

means for assigning a scanning order = 36 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

means for assigning a scanning order = 37 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

means for assigning a scanning order = 38 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

means for assigning a scanning order = 39 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

means for assigning a scanning order = 40 for a two dimensional array frequency coefficient located at $n=4$ and $m=4$;

means for assigning a scanning order = 41 for a two dimensional array frequency coefficient located at $n=4$ and $m=5$;

means for assigning a scanning order = 42 for a two dimensional array frequency coefficient located at $n=4$ and $m=6$;

means for assigning a scanning order = 43 for a two dimensional array frequency coefficient located at $n=4$ and $m=7$;

means for assigning a scanning order = 44 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

means for assigning a scanning order = 45 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

means for assigning a scanning order = 46 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

means for assigning a scanning order = 47 for a two dimensional array frequency coefficient located at $n=5$ and $m=4$;

means for assigning a scanning order = 48 for a two dimensional array frequency coefficient located at $n=5$ and $m=5$;

means for assigning a scanning order = 49 for a two dimensional array frequency coefficient located at $n=5$ and $m=6$;

means for assigning a scanning order = 50 for a two dimensional array frequency coefficient located at $n=5$ and $m=7$;

means for assigning a scanning order = 51 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

means for assigning a scanning order = 52 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

means for assigning a scanning order = 53 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

means for assigning a scanning order = 54 for a two dimensional array frequency coefficient located at $n=6$ and $m=4$;

means for assigning a scanning order = 55 for a two dimensional array frequency coefficient located at $n=6$ and $m=5$;

means for assigning a scanning order = 56 for a two dimensional array frequency coefficient located at $n=6$ and $m=6$;

means for assigning a scanning order = 57 for a two dimensional array frequency coefficient located at $n=6$ and $m=7$;

means for assigning a scanning order = 58 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$;

means for assigning a scanning order = 59 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$;

means for assigning a scanning order = 60 for a two dimensional array frequency coefficient located at $n=7$ and $m=4$;

means for assigning a scanning order = 61 for a two dimensional array frequency coefficient located at $n=7$ and $m=5$;

means for assigning a scanning order = 62 for a two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

means for assigning a scanning order = 63 for a two dimensional array frequency coefficient located at $n=7$ and $m=7$.

46. The method of claim 3, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, wherein said sixteen one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$, said step of scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

assigning a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigning a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$.

47. The method of claim 1, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, said method further comprises:

representing said sixteen one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$; and

scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=15$ and producing said two dimensional array of said two dimensional array frequency coefficients.

48. The method of claim 47, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, said step of scanning said one dimensional array frequency coefficients further comprises:

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$; and

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=15$.

49. The method of claim 5, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18,$

19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, said step of scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

assigning a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

assigning a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$.

50. The method of claim 1, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, said method further comprises:

representing said thirty-two one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$; and

scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=31$ and producing said two dimensional array of said two dimensional array frequency coefficients.

51. The method of claim 50, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable

$n=0, 1, 2$, or 3 , wherein $n=0$ is at least a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, said step of scanning said one dimensional array frequency coefficients further comprises:

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=15$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=16$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=17$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=18$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=19$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=20$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=22$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=23$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=24$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=25$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=26$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=27$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=28$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=29$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=30$; and

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=31$.

52. The method of claim 7, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$ in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, said step of scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

assigning a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

assigning a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=3$.

53. The method of claim 50, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, said step of scanning said one dimensional array frequency coefficients further comprises:

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=14$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=15$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=16$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=17$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=18$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=19$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=20$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=22$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=23$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=24$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=25$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=26$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=27$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=28$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=29$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=30$; and

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=31$.

54. The method of claim 9, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, wherein said sixty-four one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$,

said step of scanning said two dimensional array frequency coefficients in a vertically biased manner further comprises:

assigning a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=32$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=33$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=34$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=35$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=36$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=37$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=38$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=39$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=40$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=41$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=42$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=43$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=44$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=45$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=46$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=47$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=48$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=49$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=50$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=51$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=52$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigning a one dimensional array frequency coefficient located at $p=53$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigning a one dimensional array frequency coefficient located at $p=54$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=55$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=56$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigning a one dimensional array frequency coefficient located at $p=57$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigning a one dimensional array frequency coefficient located at $p=58$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigning a one dimensional array frequency coefficient located at $p=59$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigning a one dimensional array frequency coefficient located at $p=60$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigning a one dimensional array frequency coefficient located at $p=61$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigning a one dimensional array frequency coefficient located at $p=62$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigning a one dimensional array frequency coefficient located at $p=63$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=7$.

55. The method of claim 1, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, said method further comprises:

representing said sixty-four one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$; and

scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=63$ and producing said two dimensional array of said two dimensional array frequency coefficients.

56. The method of claim 55, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, said step of scanning said one dimensional array frequency coefficients further comprises:

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigning a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=14$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=15$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=16$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=17$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=18$;

assigning a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=19$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=20$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=22$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=23$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=24$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=25$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=26$;

assigning a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=27$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=28$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=29$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=30$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=31$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=32$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=33$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=34$;

assigning a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=35$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=36$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=37$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=38$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=39$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=40$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=41$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=42$;

assigning a two dimensional array frequency coefficient located at $n=4$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=43$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=44$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=45$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=46$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=47$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=48$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=49$;

assigning a two dimensional array frequency coefficient located at $n=5$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=50$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=51$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=52$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=53$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=54$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=55$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=56$;

assigning a two dimensional array frequency coefficient located at $n=6$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=57$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=58$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=59$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=60$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=61$;

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=62$; and

assigning a two dimensional array frequency coefficient located at $n=7$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=63$.

57. The device of claim 21, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, wherein said sixteen one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$.

58. The device of claim 23, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$.

59. The device of claim 25, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=3$.

60. The device of claim 27, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, wherein said sixty-four one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$,

wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=32$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=33$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=34$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=35$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=36$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=37$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=38$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=39$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=40$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigns a one dimensional array frequency coefficient located at p=41 a value of said two dimensional array frequency coefficient located at n=4 and m=5;

assigns a one dimensional array frequency coefficient located at p=42 a value of said two dimensional array frequency coefficient located at n=4 and m=6;

assigns a one dimensional array frequency coefficient located at p=43 a value of said two dimensional array frequency coefficient located at n=4 and m=7;

assigns a one dimensional array frequency coefficient located at p=44 a value of said two dimensional array frequency coefficient located at n=5 and m=3;

assigns a one dimensional array frequency coefficient located at p=45 a value of said two dimensional array frequency coefficient located at n=6 and m=1;

assigns a one dimensional array frequency coefficient located at p=46 a value of said two dimensional array frequency coefficient located at n=6 and m=2;

assigns a one dimensional array frequency coefficient located at p=47 a value of said two dimensional array frequency coefficient located at n=5 and m=4;

assigns a one dimensional array frequency coefficient located at p=48 a value of said two dimensional array frequency coefficient located at n=5 and m=5;

assigns a one dimensional array frequency coefficient located at p=49 a value of said two dimensional array frequency coefficient located at n=5 and m=6;

assigns a one dimensional array frequency coefficient located at p=50 a value of said two dimensional array frequency coefficient located at n=5 and m=7;

assigns a one dimensional array frequency coefficient located at p=51 a value of said two dimensional array frequency coefficient located at n=6 and m=3;

assigns a one dimensional array frequency coefficient located at p=52 a value of said two dimensional array frequency coefficient located at n=7 and m=0;

assigns a one dimensional array frequency coefficient located at p=53 a value of said two dimensional array frequency coefficient located at n=7 and m=1;

assigns a one dimensional array frequency coefficient located at p=54 a value of said two dimensional array frequency coefficient located at n=6 and m=4;

assigns a one dimensional array frequency coefficient located at p=55 a value of said two dimensional array frequency coefficient located at n=6 and m=5;

assigns a one dimensional array frequency coefficient located at p=56 a value of said two dimensional array frequency coefficient located at n=6 and m=6;

assigns a one dimensional array frequency coefficient located at p=57 a value of said two dimensional array frequency coefficient located at n=6 and m=7;

assigns a one dimensional array frequency coefficient located at p=58 a value of said two dimensional array frequency coefficient located at n=7 and m=2;

assigns a one dimensional array frequency coefficient located at p=59 a value of said two dimensional array frequency coefficient located at n=7 and m=3;

assigns a one dimensional array frequency coefficient located at p=60 a value of said two dimensional array frequency coefficient located at n=7 and m=4;

assigns a one dimensional array frequency coefficient located at p=61 a value of said two dimensional array frequency coefficient located at n=7 and m=5;

assigns a one dimensional array frequency coefficient located at p=62 a value of said two dimensional array frequency coefficient located at n=7 and m=6; and

assigns a one dimensional array frequency coefficient located at p=63 a value of said two dimensional array frequency coefficient located at n=7 and m=7.

61. A system for encoding digital video content and decoding encoded digital video content, said digital video content and said encoded digital video content comprising a stream of pictures, slices, or macroblocks, which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels, said system comprising:

an encoder for transform-based encoding of said digital video content, wherein said encoder scans said form of blocks of pixels forming a two dimensional array of two dimensional array frequency coefficients in a manner that is vertically biased, said encoder producing a one dimensional array of one dimensional array frequency coefficients; and

a decoder for transform-based decoding of said encoded digital video content, wherein said decoder receives said one dimensional array of one dimensional array frequency coefficients, scanned by said encoder, and scans said one dimensional array frequency coefficients in numerical sequential order thereby producing said two dimensional array of said two dimensional array frequency coefficients.

62. The system of claim 61, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

represents said rows with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 15 and producing said one dimensional array of said one dimensional array frequency coefficients.

63. The system of claim 62, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$.

64. The system of claim 63, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array

frequency coefficients, wherein said sixteen one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$.

65. The system of claim 61, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, said system:

represents said sixteen one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$; and

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=15$ and producing said two dimensional array of said two dimensional array frequency coefficients.

66. The system of claim 65, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one

of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=15$.

67. The system of claim 61, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

68. The system of claim 67, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located in at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located in at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located in at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located in at $n=0$ and $m=3$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located in at $n=1$ and $m=0$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located in at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located in at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located in at $n=0$ and $m=4$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located in at $n=0$ and $m=5$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located in at $n=0$ and $m=6$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located in at $n=0$ and $m=7$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located in at $n=1$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located in at $n=2$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located in at $n=2$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located in at $n=2$ and $m=2$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located in at $n=1$ and $m=4$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located in at $n=1$ and $m=5$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located in at $n=1$ and $m=6$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located in at $n=1$ and $m=7$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located in at $n=2$ and $m=3$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located in at $n=3$ and $m=0$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located in at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located in at $n=3$ and $m=2$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located in at $n=2$ and $m=4$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located in at $n=2$ and $m=5$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located in at $n=2$ and $m=6$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located in at $n=2$ and $m=7$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located in at $n=3$ and $m=3$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located in at $n=3$ and $m=4$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located in at $n=3$ and $m=5$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located in at $n=3$ and $m=6$; and

assigns a scanning order = 31 for a two dimensional array frequency coefficient located in at $n=3$ and $m=7$.

69. The system of claim 68, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$.

70. The system of claim 61, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, said system:

represents said thirty-two one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$; and

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=31$ and producing said two dimensional array of said two dimensional array frequency coefficients.

71. The system of claim 70, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 31$.

72. The system of claim 61, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a

fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

represents said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

73. The system of claim 72, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;
assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;
assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;
assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;
assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;
assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;
assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;
assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;
assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$; and
assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$ if said scanning order = 31.

74. The system of claim 73, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=3$.

75. The system of claim 70, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 31$.

76. The system of claim 61, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 63 and producing said one dimensional array of said one dimensional array frequency coefficients.

77. The system of claim 76, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 32 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a scanning order = 33 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a scanning order = 34 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigns a scanning order = 35 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigns a scanning order = 36 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 37 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 38 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a scanning order = 39 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a scanning order = 40 for a two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigns a scanning order = 41 for a two dimensional array frequency coefficient located at $n=4$ and $m=5$;

assigns a scanning order = 42 for a two dimensional array frequency coefficient located at $n=4$ and $m=6$;

assigns a scanning order = 43 for a two dimensional array frequency coefficient located at $n=4$ and $m=7$;

assigns a scanning order = 44 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a scanning order = 45 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a scanning order = 46 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a scanning order = 47 for a two dimensional array frequency coefficient located at $n=5$ and $m=4$;

assigns a scanning order = 48 for a two dimensional array frequency coefficient located at $n=5$ and $m=5$;

assigns a scanning order = 49 for a two dimensional array frequency coefficient located at $n=5$ and $m=6$;

assigns a scanning order = 50 for a two dimensional array frequency coefficient located at $n=5$ and $m=7$;

assigns a scanning order = 51 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a scanning order = 52 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a scanning order = 53 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a scanning order = 54 for a two dimensional array frequency coefficient located at $n=6$ and $m=4$;

assigns a scanning order = 55 for a two dimensional array frequency coefficient located at $n=6$ and $m=5$;

assigns a scanning order = 56 for a two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigns a scanning order = 57 for a two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigns a scanning order = 58 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigns a scanning order = 59 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigns a scanning order = 60 for a two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigns a scanning order = 61 for a two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigns a scanning order = 62 for a two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigns a scanning order = 63 for a two dimensional array frequency coefficient located at $n=7$ and $m=7$.

78. The system of claim 77, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, wherein said sixty-four one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at p=20 a value of said two dimensional array frequency coefficient located at n=2 and m=3;

assigns a one dimensional array frequency coefficient located at p=21 a value of said two dimensional array frequency coefficient located at n=3 and m=1;

assigns a one dimensional array frequency coefficient located at p=22 a value of said two dimensional array frequency coefficient located at n=4 and m=0;

assigns a one dimensional array frequency coefficient located at p=23 a value of said two dimensional array frequency coefficient located at n=3 and m=2;

assigns a one dimensional array frequency coefficient located at p=24 a value of said two dimensional array frequency coefficient located at n=2 and m=4;

assigns a one dimensional array frequency coefficient located at p=25 a value of said two dimensional array frequency coefficient located at n=2 and m=5;

assigns a one dimensional array frequency coefficient located at p=26 a value of said two dimensional array frequency coefficient located at n=2 and m=6;

assigns a one dimensional array frequency coefficient located at p=27 a value of said two dimensional array frequency coefficient located at n=2 and m=7;

assigns a one dimensional array frequency coefficient located at p=28 a value of said two dimensional array frequency coefficient located at n=3 and m=3;

assigns a one dimensional array frequency coefficient located at p=29 a value of said two dimensional array frequency coefficient located at n=4 and m=1;

assigns a one dimensional array frequency coefficient located at p=30 a value of said two dimensional array frequency coefficient located at n=5 and m=0;

assigns a one dimensional array frequency coefficient located at p=31 a value of said two dimensional array frequency coefficient located at n=4 and m=2;

assigns a one dimensional array frequency coefficient located at p=32 a value of said two dimensional array frequency coefficient located at n=3 and m=4;

assigns a one dimensional array frequency coefficient located at p=33 a value of said two dimensional array frequency coefficient located at n=3 and m=5;

assigns a one dimensional array frequency coefficient located at p=34 a value of said two dimensional array frequency coefficient located at n=3 and m=6;

assigns a one dimensional array frequency coefficient located at p=35 a value of said two dimensional array frequency coefficient located at n=3 and m=7;

assigns a one dimensional array frequency coefficient located at p=36 a value of said two dimensional array frequency coefficient located at n=4 and m=3;

assigns a one dimensional array frequency coefficient located at p=37 a value of said two dimensional array frequency coefficient located at n=5 and m=1;

assigns a one dimensional array frequency coefficient located at p=38 a value of said two dimensional array frequency coefficient located at n=6 and m=0;

assigns a one dimensional array frequency coefficient located at p=39 a value of said two dimensional array frequency coefficient located at n=5 and m=2;

assigns a one dimensional array frequency coefficient located at p=40 a value of said two dimensional array frequency coefficient located at n=4 and m=4;

assigns a one dimensional array frequency coefficient located at p=41 a value of said two dimensional array frequency coefficient located at n=4 and m=5;

assigns a one dimensional array frequency coefficient located at p=42 a value of said two dimensional array frequency coefficient located at n=4 and m=6;

assigns a one dimensional array frequency coefficient located at p=43 a value of said two dimensional array frequency coefficient located at n=4 and m=7;

assigns a one dimensional array frequency coefficient located at p=44 a value of said two dimensional array frequency coefficient located at n=5 and m=3;

assigns a one dimensional array frequency coefficient located at p=45 a value of said two dimensional array frequency coefficient located at n=6 and m=1;

assigns a one dimensional array frequency coefficient located at p=46 a value of said two dimensional array frequency coefficient located at n=6 and m=2;

assigns a one dimensional array frequency coefficient located at p=47 a value of said two dimensional array frequency coefficient located at n=5 and m=4;

assigns a one dimensional array frequency coefficient located at p=48 a value of said two dimensional array frequency coefficient located at n=5 and m=5;

assigns a one dimensional array frequency coefficient located at p=49 a value of said two dimensional array frequency coefficient located at n=5 and m=6;

assigns a one dimensional array frequency coefficient located at p=50 a value of said two dimensional array frequency coefficient located at n=5 and m=7;

assigns a one dimensional array frequency coefficient located at p=51 a value of said two dimensional array frequency coefficient located at n=6 and m=3;

assigns a one dimensional array frequency coefficient located at p=52 a value of said two dimensional array frequency coefficient located at n=7 and m=0;

assigns a one dimensional array frequency coefficient located at p=53 a value of said two dimensional array frequency coefficient located at n=7 and m=1;

assigns a one dimensional array frequency coefficient located at p=54 a value of said two dimensional array frequency coefficient located at n=6 and m=4;

assigns a one dimensional array frequency coefficient located at p=55 a value of said two dimensional array frequency coefficient located at n=6 and m=5;

assigns a one dimensional array frequency coefficient located at p=56 a value of said two dimensional array frequency coefficient located at n=6 and m=6;

assigns a one dimensional array frequency coefficient located at p=57 a value of said two dimensional array frequency coefficient located at n=6 and m=7;

assigns a one dimensional array frequency coefficient located at p=58 a value of said two dimensional array frequency coefficient located at n=7 and m=2;

assigns a one dimensional array frequency coefficient located at p=59 a value of said two dimensional array frequency coefficient located at n=7 and m=3;

assigns a one dimensional array frequency coefficient located at p=60 a value of said two dimensional array frequency coefficient located at n=7 and m=4;

assigns a one dimensional array frequency coefficient located at p=61 a value of said two dimensional array frequency coefficient located at n=7 and m=5;

assigns a one dimensional array frequency coefficient located at $p=62$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigns a one dimensional array frequency coefficient located at $p=63$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=7$.

79. The system of claim 61, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, said system:

represents said sixty-four one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$;

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=63$ and producing said two dimensional array of said two dimensional array frequency coefficients.

80. The system of claim 79, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is

at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 30$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 31$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 32$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 33$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 34$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 35$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 36$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 37$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 38$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 39$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 40$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 41$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 42$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 43$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 44$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 45$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 46$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 47$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 48$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 49$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 50$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 51$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 52$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 53$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 54$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 55$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 56$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 57$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 58$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 59$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 60$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 61$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 62$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 63$.

81. A system for decoding encoded digital video content and encoding digital video content, said encoded digital video content and said digital video content comprising a stream of pictures, slices, or macroblocks, which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels, said system comprising:

a decoder for transform-based decoding of said encoded digital video content, wherein said decoder scans said form of blocks of pixels forming a one dimensional array of one dimensional array frequency coefficients in numerical sequential order and scans said one dimensional array frequency coefficients in numerical sequential

order thereby producing a two dimensional array of two dimensional array frequency coefficients; and

a encoder for transform-based encoding of said digital video content, wherein said encoder receives said two dimensional array of two dimensional array frequency coefficients, scanned by said decoder, and scans said two dimensional array frequency coefficients in a manner that is vertically biased thereby producing said one dimensional array of said one dimensional array frequency coefficients.

82. The system of claim 81, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, said system:

represents said sixteen one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$; and

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=15$ and producing said two dimensional array of said two dimensional array frequency coefficients.

83. The system of claim 82, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=15$.

84. The system of claim 81, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

represents said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 15 and producing said one dimensional array of said one dimensional array frequency coefficients.

85. The system of claim 84, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$.

86. The system of claim 85, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, wherein said sixteen one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical

sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$; and

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$.

87. The system of claim 81, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, said system:

represents said thirty-two one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$; and

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=31$ and producing said two dimensional array of said two dimensional array frequency coefficients.

88. The system of claim 87, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row,

m=4 is a fifth row, m=5 is a sixth row, m=6 is a seventh row, and m=7 is at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at n=0 and m=0 a value of said one dimensional array frequency coefficient located at p = 0;

assigns a two dimensional array frequency coefficient located at n=0 and m=1 a value of said one dimensional array frequency coefficient located at p = 1;

assigns a two dimensional array frequency coefficient located at n=0 and m=2 a value of said one dimensional array frequency coefficient located at p = 2;

assigns a two dimensional array frequency coefficient located at n=0 and m=3 a value of said one dimensional array frequency coefficient located at p = 3;

assigns a two dimensional array frequency coefficient located at n=1 and m=0 a value of said one dimensional array frequency coefficient located at p = 4;

assigns a two dimensional array frequency coefficient located at n=1 and m=1 a value of said one dimensional array frequency coefficient located at p = 5;

assigns a two dimensional array frequency coefficient located at n=1 and m=2 a value of said one dimensional array frequency coefficient located at p = 6;

assigns a two dimensional array frequency coefficient located at n=0 and m=4 a value of said one dimensional array frequency coefficient located at p = 7;

assigns a two dimensional array frequency coefficient located at n=0 and m=5 a value of said one dimensional array frequency coefficient located at p = 8;

assigns a two dimensional array frequency coefficient located at n=0 and m=6 a value of said one dimensional array frequency coefficient located at p = 9;

assigns a two dimensional array frequency coefficient located at n=0 and m=7 a value of said one dimensional array frequency coefficient located at p = 10;

assigns a two dimensional array frequency coefficient located at n=1 and m=3 a value of said one dimensional array frequency coefficient located at p = 11;

assigns a two dimensional array frequency coefficient located at n=2 and m=0 a value of said one dimensional array frequency coefficient located at p = 12;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 31$.

89. The system of claim 81, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column;

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

90. The system of claim 89, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located in at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located in at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located in at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located in at $n=0$ and $m=3$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located in at $n=1$ and $m=0$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located in at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located in at $n=1$ and $m=2$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located in at $n=0$ and $m=4$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located in at $n=0$ and $m=5$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located in at $n=0$ and $m=6$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located in at $n=0$ and $m=7$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located in at $n=1$ and $m=3$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located in at $n=2$ and $m=0$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located in at $n=2$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located in at $n=2$ and $m=2$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located in at $n=1$ and $m=4$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located in at $n=1$ and $m=5$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located in at $n=1$ and $m=6$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located in at $n=1$ and $m=7$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located in at $n=2$ and $m=3$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located in at $n=3$ and $m=0$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located in at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located in at $n=3$ and $m=2$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located in at $n=2$ and $m=4$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located in at $n=2$ and $m=5$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located in at $n=2$ and $m=6$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located in at $n=2$ and $m=7$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located in at $n=3$ and $m=3$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located in at $n=3$ and $m=4$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located in at $n=3$ and $m=5$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located in at $n=3$ and $m=6$; and

assigns a scanning order = 31 for a two dimensional array frequency coefficient located in at $n=3$ and $m=7$.

91. The system of claim 90, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=28$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=29$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=30$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=6$; and

assigns a one dimensional array frequency coefficient located at $p=31$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=7$.

92. The system of claim 87, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a

second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 30$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 31$.

93. The system of claim 81, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

represents said rows with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 31 and producing said one dimensional array of said one dimensional array frequency coefficients.

94. The system of claim 93, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$; and

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$ if said scanning order = 31.

95. The system of claim 94, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, wherein said thirty-two one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a one dimensional array frequency coefficient located at p=19 a value of said two dimensional array frequency coefficient located at n=4 and m=2;

assigns a one dimensional array frequency coefficient located at p=20 a value of said two dimensional array frequency coefficient located at n=4 and m=3;

assigns a one dimensional array frequency coefficient located at p=21 a value of said two dimensional array frequency coefficient located at n=5 and m=1;

assigns a one dimensional array frequency coefficient located at p=22 a value of said two dimensional array frequency coefficient located at n=6 and m=0;

assigns a one dimensional array frequency coefficient located at p=23 a value of said two dimensional array frequency coefficient located at n=5 and m=2;

assigns a one dimensional array frequency coefficient located at p=24 a value of said two dimensional array frequency coefficient located at n=5 and m=3;

assigns a one dimensional array frequency coefficient located at p=25 a value of said two dimensional array frequency coefficient located at n=6 and m=1;

assigns a one dimensional array frequency coefficient located at p=26 a value of said two dimensional array frequency coefficient located at n=7 and m=0;

assigns a one dimensional array frequency coefficient located at p=27 a value of said two dimensional array frequency coefficient located at n=6 and m=2;

assigns a one dimensional array frequency coefficient located at p=28 a value of said two dimensional array frequency coefficient located at n=6 and m=3;

assigns a one dimensional array frequency coefficient located at p=29 a value of said two dimensional array frequency coefficient located at n=7 and m=1;

assigns a one dimensional array frequency coefficient located at p=30 a value of said two dimensional array frequency coefficient located at n=7 and m=2; and

assigns a one dimensional array frequency coefficient located at p=31 a value of said two dimensional array frequency coefficient located at n=7 and m=3.

96. The system of claim 81, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, said system:

represents said sixty-four one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$;

wherein said decoder scans said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=63$ and producing said two dimensional array of said two dimensional array frequency coefficients.

97. The system of claim 96, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, wherein in scanning said one dimensional array frequency coefficients said decoder:

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 0$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 1$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 2$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 3$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 4$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 5$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 6$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 7$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 8$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 9$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 10$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 11$;

assigns a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 12$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 13$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 14$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 15$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 16$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 17$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 18$;

assigns a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 19$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 20$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 21$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 22$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 23$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 24$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 25$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 26$;

assigns a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 27$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 28$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 29$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 30$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 31$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 32$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 33$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 34$;

assigns a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 35$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 36$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 37$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 38$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 39$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 40$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 41$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 42$;

assigns a two dimensional array frequency coefficient located at $n=4$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 43$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 44$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 45$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 46$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 47$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 48$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 49$;

assigns a two dimensional array frequency coefficient located at $n=5$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 50$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 51$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p = 52$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p = 53$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 54$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 55$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 56$;

assigns a two dimensional array frequency coefficient located at $n=6$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 57$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p = 58$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p = 59$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p = 60$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p = 61$;

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p = 62$; and

assigns a two dimensional array frequency coefficient located at $n=7$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p = 63$.

98. The system of claim 81, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, said system:

represents said columns with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column;

represents said rows with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row; and

wherein said encoder scans said two dimensional array of said two dimensional array frequency coefficients in a scanning order that is vertically biased, said scanning order starting at 0 and ending at 63 and producing said one dimensional array of said one dimensional array frequency coefficients.

99. The system of claim 98, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder:

assigns a scanning order = 0 for a two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a scanning order = 1 for a two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a scanning order = 2 for a two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a scanning order = 3 for a two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a scanning order = 4 for a two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a scanning order = 5 for a two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a scanning order = 6 for a two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a scanning order = 7 for a two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a scanning order = 8 for a two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a scanning order = 9 for a two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a scanning order = 10 for a two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a scanning order = 11 for a two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a scanning order = 12 for a two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a scanning order = 13 for a two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a scanning order = 14 for a two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a scanning order = 15 for a two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a scanning order = 16 for a two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a scanning order = 17 for a two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a scanning order = 18 for a two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a scanning order = 19 for a two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a scanning order = 20 for a two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a scanning order = 21 for a two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a scanning order = 22 for a two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a scanning order = 23 for a two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a scanning order = 24 for a two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a scanning order = 25 for a two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a scanning order = 26 for a two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a scanning order = 27 for a two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a scanning order = 28 for a two dimensional array frequency coefficient located at $n=3$ and $m=3$;

assigns a scanning order = 29 for a two dimensional array frequency coefficient located at $n=4$ and $m=1$;

assigns a scanning order = 30 for a two dimensional array frequency coefficient located at $n=5$ and $m=0$;

assigns a scanning order = 31 for a two dimensional array frequency coefficient located at $n=4$ and $m=2$;

assigns a scanning order = 32 for a two dimensional array frequency coefficient located at $n=3$ and $m=4$;

assigns a scanning order = 33 for a two dimensional array frequency coefficient located at $n=3$ and $m=5$;

assigns a scanning order = 34 for a two dimensional array frequency coefficient located at $n=3$ and $m=6$;

assigns a scanning order = 35 for a two dimensional array frequency coefficient located at $n=3$ and $m=7$;

assigns a scanning order = 36 for a two dimensional array frequency coefficient located at $n=4$ and $m=3$;

assigns a scanning order = 37 for a two dimensional array frequency coefficient located at $n=5$ and $m=1$;

assigns a scanning order = 38 for a two dimensional array frequency coefficient located at $n=6$ and $m=0$;

assigns a scanning order = 39 for a two dimensional array frequency coefficient located at $n=5$ and $m=2$;

assigns a scanning order = 40 for a two dimensional array frequency coefficient located at $n=4$ and $m=4$;

assigns a scanning order = 41 for a two dimensional array frequency coefficient located at $n=4$ and $m=5$;

assigns a scanning order = 42 for a two dimensional array frequency coefficient located at $n=4$ and $m=6$;

assigns a scanning order = 43 for a two dimensional array frequency coefficient located at $n=4$ and $m=7$;

assigns a scanning order = 44 for a two dimensional array frequency coefficient located at $n=5$ and $m=3$;

assigns a scanning order = 45 for a two dimensional array frequency coefficient located at $n=6$ and $m=1$;

assigns a scanning order = 46 for a two dimensional array frequency coefficient located at $n=6$ and $m=2$;

assigns a scanning order = 47 for a two dimensional array frequency coefficient located at $n=5$ and $m=4$;

assigns a scanning order = 48 for a two dimensional array frequency coefficient located at $n=5$ and $m=5$;

assigns a scanning order = 49 for a two dimensional array frequency coefficient located at $n=5$ and $m=6$;

assigns a scanning order = 50 for a two dimensional array frequency coefficient located at $n=5$ and $m=7$;

assigns a scanning order = 51 for a two dimensional array frequency coefficient located at $n=6$ and $m=3$;

assigns a scanning order = 52 for a two dimensional array frequency coefficient located at $n=7$ and $m=0$;

assigns a scanning order = 53 for a two dimensional array frequency coefficient located at $n=7$ and $m=1$;

assigns a scanning order = 54 for a two dimensional array frequency coefficient located at $n=6$ and $m=4$;

assigns a scanning order = 55 for a two dimensional array frequency coefficient located at $n=6$ and $m=5$;

assigns a scanning order = 56 for a two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigns a scanning order = 57 for a two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigns a scanning order = 58 for a two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigns a scanning order = 59 for a two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigns a scanning order = 60 for a two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigns a scanning order = 61 for a two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigns a scanning order = 62 for a two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigns a scanning order = 63 for a two dimensional array frequency coefficient located at $n=7$ and $m=7$.

100. The system of claim 99, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, wherein said sixty-four one dimensional array frequency coefficients are represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$, wherein in scanning said two dimensional array frequency coefficients in a vertically biased manner said encoder further:

assigns a one dimensional array frequency coefficient located at $p=0$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=1$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=2$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=3$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=4$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=5$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=6$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=7$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=8$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=9$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=10$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=11$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=12$ a value of said two dimensional array frequency coefficient located at $n=0$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=13$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=14$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=15$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=16$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=17$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=18$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=19$ a value of said two dimensional array frequency coefficient located at $n=1$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=20$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=21$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=1$;

assigns a one dimensional array frequency coefficient located at $p=22$ a value of said two dimensional array frequency coefficient located at $n=4$ and $m=0$;

assigns a one dimensional array frequency coefficient located at $p=23$ a value of said two dimensional array frequency coefficient located at $n=3$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=24$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=25$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=26$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=27$ a value of said two dimensional array frequency coefficient located at $n=2$ and $m=7$;

assigns a one dimensional array frequency coefficient located at p=28 a value of said two dimensional array frequency coefficient located at n=3 and m=3;

assigns a one dimensional array frequency coefficient located at p=29 a value of said two dimensional array frequency coefficient located at n=4 and m=1;

assigns a one dimensional array frequency coefficient located at p=30 a value of said two dimensional array frequency coefficient located at n=5 and m=0;

assigns a one dimensional array frequency coefficient located at p=31 a value of said two dimensional array frequency coefficient located at n=4 and m=2;

assigns a one dimensional array frequency coefficient located at p=32 a value of said two dimensional array frequency coefficient located at n=3 and m=4;

assigns a one dimensional array frequency coefficient located at p=33 a value of said two dimensional array frequency coefficient located at n=3 and m=5;

assigns a one dimensional array frequency coefficient located at p=34 a value of said two dimensional array frequency coefficient located at n=3 and m=6;

assigns a one dimensional array frequency coefficient located at p=35 a value of said two dimensional array frequency coefficient located at n=3 and m=7;

assigns a one dimensional array frequency coefficient located at p=36 a value of said two dimensional array frequency coefficient located at n=4 and m=3;

assigns a one dimensional array frequency coefficient located at p=37 a value of said two dimensional array frequency coefficient located at n=5 and m=1;

assigns a one dimensional array frequency coefficient located at p=38 a value of said two dimensional array frequency coefficient located at n=6 and m=0;

assigns a one dimensional array frequency coefficient located at p=39 a value of said two dimensional array frequency coefficient located at n=5 and m=2;

assigns a one dimensional array frequency coefficient located at p=40 a value of said two dimensional array frequency coefficient located at n=4 and m=4;

assigns a one dimensional array frequency coefficient located at p=41 a value of said two dimensional array frequency coefficient located at n=4 and m=5;

assigns a one dimensional array frequency coefficient located at p=42 a value of said two dimensional array frequency coefficient located at n=4 and m=6;

assigns a one dimensional array frequency coefficient located at p=43 a value of said two dimensional array frequency coefficient located at n=4 and m=7;

assigns a one dimensional array frequency coefficient located at p=44 a value of said two dimensional array frequency coefficient located at n=5 and m=3;

assigns a one dimensional array frequency coefficient located at p=45 a value of said two dimensional array frequency coefficient located at n=6 and m=1;

assigns a one dimensional array frequency coefficient located at p=46 a value of said two dimensional array frequency coefficient located at n=6 and m=2;

assigns a one dimensional array frequency coefficient located at p=47 a value of said two dimensional array frequency coefficient located at n=5 and m=4;

assigns a one dimensional array frequency coefficient located at p=48 a value of said two dimensional array frequency coefficient located at n=5 and m=5;

assigns a one dimensional array frequency coefficient located at p=49 a value of said two dimensional array frequency coefficient located at n=5 and m=6;

assigns a one dimensional array frequency coefficient located at p=50 a value of said two dimensional array frequency coefficient located at n=5 and m=7;

assigns a one dimensional array frequency coefficient located at p=51 a value of said two dimensional array frequency coefficient located at n=6 and m=3;

assigns a one dimensional array frequency coefficient located at p=52 a value of said two dimensional array frequency coefficient located at n=7 and m=0;

assigns a one dimensional array frequency coefficient located at p=53 a value of said two dimensional array frequency coefficient located at n=7 and m=1;

assigns a one dimensional array frequency coefficient located at p=54 a value of said two dimensional array frequency coefficient located at n=6 and m=4;

assigns a one dimensional array frequency coefficient located at p=55 a value of said two dimensional array frequency coefficient located at n=6 and m=5;

assigns a one dimensional array frequency coefficient located at $p=56$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=6$;

assigns a one dimensional array frequency coefficient located at $p=57$ a value of said two dimensional array frequency coefficient located at $n=6$ and $m=7$;

assigns a one dimensional array frequency coefficient located at $p=58$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=2$;

assigns a one dimensional array frequency coefficient located at $p=59$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=3$;

assigns a one dimensional array frequency coefficient located at $p=60$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=4$;

assigns a one dimensional array frequency coefficient located at $p=61$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=5$;

assigns a one dimensional array frequency coefficient located at $p=62$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=6$; and

assigns a one dimensional array frequency coefficient located at $p=63$ a value of said two dimensional array frequency coefficient located at $n=7$ and $m=7$.

101. A video signal comprising transform-based encoded digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks, which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a one dimensional array of one dimensional array frequency coefficients.

102. The video signal of claim 101, wherein said one dimensional array of one dimensional array frequency coefficients comprises sixteen frequency coefficients, said sixteen frequency coefficients being represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, respectively, wherein the first coefficient is represented by $p=0$, the second coefficient is represented by $p=1$, the third coefficient is represented by $p=2$, the fourth coefficient is represented by $p=3$, the fifth coefficient is represented by $p=4$, the sixth

coefficient is represented by $p=5$, the seventh coefficient is represented by $p=6$, the eighth coefficient is represented by $p=7$, the ninth coefficient is represented by $p=8$, the tenth coefficient is represented by $p=9$, the eleventh coefficient is represented by $p=10$, the twelfth coefficient is represented by $p=11$, the thirteenth coefficient is represented by $p=12$, the fourteenth coefficient is represented by $p=13$, the fifteenth coefficient is represented by $p=14$, and the sixteenth coefficient is represented by $p=15$.

103. The video signal of claim 101, wherein said one dimensional array of one dimensional array frequency coefficients comprises thirty-two frequency coefficients, said thirty-two frequency coefficients being represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, respectively, wherein the first coefficient is represented by $p=0$, the second coefficient is represented by $p=1$, the third coefficient is represented by $p=2$, the fourth coefficient is represented by $p=3$, the fifth coefficient is represented by $p=4$, the sixth coefficient is represented by $p=5$, the seventh coefficient is represented by $p=6$, the eighth coefficient is represented by $p=7$, the ninth coefficient is represented by $p=8$, the tenth coefficient is represented by $p=9$, the eleventh coefficient is represented by $p=10$, the twelfth coefficient is represented by $p=11$, the thirteenth coefficient is represented by $p=12$, the fourteenth coefficient is represented by $p=13$, the fifteenth coefficient is represented by $p=14$, the sixteenth coefficient is represented by $p=15$, the seventeenth coefficient is represented by $p=16$, the eighteenth coefficient is represented by $p=17$, the nineteenth coefficient is represented by $p=18$, the twentieth coefficient is represented by $p=19$, the twenty-first coefficient is represented by $p=20$, the twenty-second coefficient is represented by $p=21$, the twenty-third coefficient is represented by $p=22$, the twenty-fourth coefficient is represented by $p=23$, the twenty-fifth coefficient is represented by $p=24$, the twenty-sixth coefficient is represented by $p=25$, the twenty-seventh coefficient is represented by $p=26$, the twenty-eighth coefficient is represented by $p=27$, the twenty-ninth coefficient is represented by $p=28$, the thirtieth coefficient is represented by $p=29$, the thirty-first coefficient is represented by $p=30$, and the thirty-second coefficient is represented by $p=31$.

104. The video signal of claim 101, wherein said one dimensional array of one dimensional array frequency coefficients comprises sixty-four frequency coefficients, said sixty-four frequency coefficients being represented with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, respectively, wherein the first coefficient is represented by $p=0$, the second coefficient is represented by $p=1$, the third coefficient is represented by $p=2$, the fourth coefficient is represented by $p=3$, the fifth coefficient is represented by $p=4$, the sixth coefficient is represented by $p=5$, the seventh coefficient is represented by $p=6$, the eighth coefficient is represented by $p=7$, the ninth coefficient is represented by $p=8$, the tenth coefficient is represented by $p=9$, the eleventh coefficient is represented by $p=10$, the twelfth coefficient is represented by $p=11$, the thirteenth coefficient is represented by $p=12$, the fourteenth coefficient is represented by $p=13$, the fifteenth coefficient is represented by $p=14$, the sixteenth coefficient is represented by $p=15$, the seventeenth coefficient is represented by $p=16$, the eighteenth coefficient is represented by $p=17$, the nineteenth coefficient is represented by $p=18$, the twentieth coefficient is represented by $p=19$, the twenty-first coefficient is represented by $p=20$, the twenty-second coefficient is represented by $p=21$, the twenty-third coefficient is represented by $p=22$, the twenty-fourth coefficient is represented by $p=23$, the twenty-fifth coefficient is represented by $p=24$, the twenty-sixth coefficient is represented by $p=25$, the twenty-seventh coefficient is represented by $p=26$, the twenty-eighth coefficient is represented by $p=27$, the twenty-ninth coefficient is represented by $p=28$, the thirtieth coefficient is represented by $p=29$, the thirty-first coefficient is represented by $p=30$, the thirty-second coefficient is represented by $p=31$, the thirty-third coefficient is represented by $p=32$, the thirty-fourth coefficient is represented by $p=33$, the thirty-fifth coefficient is represented by $p=34$, the thirty-sixth coefficient is represented by $p=35$, the thirty-seventh coefficient is represented by $p=36$, the thirty-eighth coefficient is represented by $p=37$, the thirty-ninth coefficient is represented by $p=38$, the fortieth coefficient is represented by $p=39$, the forty-first coefficient is represented by $p=40$, the forty-second coefficient is represented by

p=41, the forty-third coefficient is represented by p=42, the forty-fourth coefficient is represented by p=43, the forty-fifth coefficient is represented by p=44, the forty-sixth coefficient is represented by p=45, the forty-seventh coefficient is represented by p=46, the forty-eighth coefficient is represented by p=47, the forty-ninth coefficient is represented by p=48, the fiftieth coefficient is represented by p=49, the fifty-first coefficient is represented by p=50, the fifty-second coefficient is represented by p=51, the fifty-third coefficient is represented by p=52, the fifty-fourth coefficient is represented by p=53, the fifty-fifth coefficient is represented by p=54, the fifty-sixth coefficient is represented by p=55, the fifty-seventh coefficient is represented by p=56, the fifty-eighth coefficient is represented by p=57, the fifty-ninth coefficient is represented by p=58, the sixtieth coefficient is represented by p=59, the sixty-first coefficient is represented by p=60, the sixty-second coefficient is represented by p=61, the sixty-third coefficient is represented by p=62, and the sixty-fourth coefficient is represented by p=63.

105. A video signal comprising transform-based decoded digital video content, said digital video content comprising a stream of pictures, slices, or macroblocks, which can be intra, predicted or bi-predicted pictures, slices, or macroblocks, in the form of blocks of pixels forming a two dimensional array of two dimensional array frequency coefficients.

106. The video signal of claim 105, wherein said two dimensional array of two dimensional array frequency coefficients comprises:

four columns of frequency coefficients, said columns being represented with a variable $n=0, 1, 2$, or 3 , wherein $n=0$ is a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is a fourth or rightmost column; and

four rows of frequency coefficients, said rows being represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is a fourth or bottom row.

107. The video signal of claim 105, wherein said two dimensional array of two dimensional array frequency coefficients comprises:

four columns of frequency coefficients, said columns being represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is a fourth or rightmost column; and

eight rows of frequency coefficients, said rows being represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is an eighth or bottom row.

108. The video signal of claim 105, wherein said two dimensional array of two dimensional array frequency coefficients comprises:

eight columns of frequency coefficients, said columns being represented with a variable $n=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $n=0$ is a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is a eighth or rightmost column; and

four rows of frequency coefficients, said rows being represented with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is a fourth or bottom row.

109. The video signal of claim 105, wherein said two dimensional array of two dimensional array frequency coefficients comprises:

eight columns of frequency coefficients, said columns being represented with a variable $n=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $n=0$ is a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is a eighth or rightmost column; and

eight rows of frequency coefficients, said rows being represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is a first or top row, $m=1$ is a second row, $m=2$ is a third

row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is an eighth or bottom row.

110. The system of claim 37, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixteen one dimensional array frequency coefficients, said system further comprises:

means for representing said sixteen one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixteenth one dimensional array frequency coefficient is represented by $p=15$; and

means for scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=15$ and producing said two dimensional array of said two dimensional array frequency coefficients.

111. The system of claim 110, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is at least one of a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, \text{ or } 3$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, said means for scanning said one dimensional array frequency coefficients further comprises:

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=7$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=10$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$; and

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=15$.

112. The system of claim 37, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises thirty-two one dimensional array frequency coefficients, said system further comprises:

means for representing said thirty-two one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31$, in a numerical sequential order, wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a thirty-second one dimensional array frequency coefficient is represented by $p=31$; and

means for scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=31$ and producing said two dimensional array of said two dimensional array frequency coefficients.

113. The system of claim 112, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 4 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, \text{ or } 3$, wherein $n=0$ is at least a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, and $n=3$ is a fourth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6, \text{ or } 7$, wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, said means for scanning said one dimensional array frequency coefficients further comprises:

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=2$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=3$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=4$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=6$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=7$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=8$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=9$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=10$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=11$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=12$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=14$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=15$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=16$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=17$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=18$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=19$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=20$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=22$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=23$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=24$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=25$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=26$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=27$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=28$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=29$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=30$; and

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=31$.

114. The system of claim 112, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 4 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2$, or 3 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, and $m=3$ is at least one of a fourth or bottom row, said means for scanning said one dimensional array frequency coefficients further comprises:

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=2$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=3$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=4$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=5$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=6$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=7$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=8$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=9$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=10$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=11$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=12$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=13$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=14$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=15$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=16$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=17$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=18$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=19$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=20$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=22$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=23$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=24$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=25$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=26$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=27$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=28$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=29$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=30$; and

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=31$.

115. The system of claim 37, wherein if said one dimensional array of said one dimensional array frequency coefficients comprises sixty-four one dimensional array frequency coefficients, said system further comprises:

means for representing said sixty-four one dimensional array frequency coefficients with a variable $p=0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63$, in a numerical sequential order,

wherein a first one dimensional array frequency coefficient is represented by $p=0$ and a sixty-fourth one dimensional array frequency coefficient is represented by $p=63$; and

means for scanning said one dimensional array of said one dimensional array frequency coefficients in said numerical sequential order, said scanning starting at $p=0$ and ending at $p=63$ and producing said two dimensional array of said two dimensional array frequency coefficients.

116. The system of claim 115, wherein if said two dimensional array of said two dimensional array frequency coefficients comprises 8 columns of frequency coefficients and 8 rows of frequency coefficients, wherein said columns are represented with a variable $n=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $n=0$ is at least one of a first or leftmost column, $n=1$ is a second column, $n=2$ is a third column, $n=3$ is a fourth column, $n=4$ is a fifth column, $n=5$ is a sixth column, $n=6$ is a seventh column, and $n=7$ is at least one of an eighth or rightmost column, and wherein said rows are represented with a variable $m=0, 1, 2, 3, 4, 5, 6$, or 7 , wherein $m=0$ is at least one of a first or top row, $m=1$ is a second row, $m=2$ is a third row, $m=3$ is a fourth row, $m=4$ is a fifth row, $m=5$ is a sixth row, $m=6$ is a seventh row, and $m=7$ is at least one of an eighth or bottom row, said means for scanning said one dimensional array frequency coefficients further comprises:

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=0$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=1$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=2$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=3$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=4$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=5$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=6$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=7$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=8$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=9$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=10$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=11$;

means for assigning a two dimensional array frequency coefficient located at $n=0$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=12$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=13$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=14$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=15$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=16$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=17$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=18$;

means for assigning a two dimensional array frequency coefficient located at $n=1$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=19$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=20$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=21$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=22$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=23$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=24$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=25$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=26$;

means for assigning a two dimensional array frequency coefficient located at $n=2$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=27$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=28$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=29$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=30$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=31$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=32$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=33$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=34$;

means for assigning a two dimensional array frequency coefficient located at $n=3$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=35$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=36$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=37$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=38$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=39$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=40$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=41$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=42$;

means for assigning a two dimensional array frequency coefficient located at $n=4$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=43$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=44$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=45$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=46$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=47$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=48$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=49$;

means for assigning a two dimensional array frequency coefficient located at $n=5$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=50$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=51$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=0$ a value of said one dimensional array frequency coefficient located at $p=52$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=1$ a value of said one dimensional array frequency coefficient located at $p=53$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=54$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=55$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=56$;

means for assigning a two dimensional array frequency coefficient located at $n=6$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=57$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=2$ a value of said one dimensional array frequency coefficient located at $p=58$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=3$ a value of said one dimensional array frequency coefficient located at $p=59$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=4$ a value of said one dimensional array frequency coefficient located at $p=60$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=5$ a value of said one dimensional array frequency coefficient located at $p=61$;

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=6$ a value of said one dimensional array frequency coefficient located at $p=62$; and

means for assigning a two dimensional array frequency coefficient located at $n=7$ and $m=7$ a value of said one dimensional array frequency coefficient located at $p=63$.